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### **ABSTRACT**

A method for selecting combinations of drugs for treatment of diseases that arise from deranged signaling pathways is disclosed. The method involve measuring the activity states for signaling proteins in a diseased cell and determining whether the  
5 activity states are different from the activity states observed for a reference cell such as a normal cell. Based on the observed differences, combinations of two or more drugs are selected to reduce these differences. Treatment of a subject with the combinations restores the activity states of the signaling proteins of the deranged disease-associated signaling pathways toward the activity states observed in the reference cell. Since the  
10 diseased cell and the reference cell can both be obtained from the same subject, combinations of drugs that specifically target patient-specific signaling derangements is possible.